

REMARKS

Claims 1-17, 19, and 20 are pending in the application. Claims 10, 19, and 20 have been withdrawn from consideration by the Examiner. Claim 1 has been objected to for a minor informality. Claims 11-17 stand rejected under 35 U.S.C. § 112, first paragraph. Claims 1-9 and 11-17 stand rejected under 35 U.S.C. § 103(a) over *newly cited* Szczukowski (U.S. 6,280,132) in view of *newly cited* Yamashita (U.S. 6,705,830).

I. Claim Objections

Claim 1 has been objected to because in claim 1, the recitation “screws (17) pass” should be “the screws (17) pass. Applicant has amended claim 1 in the manner suggested by the Examiner.

II. Claim Rejections - 35 U.S.C. § 112

Claims 11-17 stand rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement. In particular, the Examiner maintains that the recitation “a gap in which the shank is bendable without breaking” (lines 11-12 of claim 11) is not supported in the disclosure.

Although Applicant does not necessarily agree with the Examiner, as a path of least resistance, Applicant has amended claim 11 in a manner believed to overcome the rejection.

III. Claim Rejections - 35 U.S.C. § 103

Claims 1-9 and 11-17 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent No. 6,280,132 to Szczukowski (“Szczukowski”) in view of U.S. Patent No. 6,705,830 to Yamashita (“Yamashita”) and Japanese Patent Application No. JP 08114196 to Mitsubishi Heavy Ind. Ltd. (“Mitsubishi”). Applicant respectfully traverses the rejection as follows.

Claim 1 recites, *inter alia*:

wherein each through hole (16) comprises a distal segment (16a) that is cylindrical about a first axis followed by an enlarged proximal segment (16b) that is cylindrical about the first axis;...
wherein the proximal segment is connected to the distal segment by a frustoconical distal portion; and
wherein the shank of the screw bends inside the through hole and the proximal segment of each through hole is of a length greater than the length of the distal segment of each through hole, such that the through holes are configured to offset laterally in response to shear forces (20, 21) being applied in any lateral direction in a connection zone between the vacuum pump (1) and the stationary structure (3).

Szczukowski teaches a fastening arrangement having a fastening screw 10 that passes through an assembly part 40 that includes a through-bore 41 and an undercut 42. See Szczukowski at Fig. 1. However, Szczukowski is completely silent with respect to whether the through-bore 41 of Szczukowski (which the Examiner analogizes to the claimed through hole) is configured to offset laterally in response to shear forces being applied in a lateral direction.

The Examiner contends that because Szczukowski allegedly teaches the same structure as that recited in claim 1, the apparatus of Szczukowski inherently contains a screw shank that is configured to bend and through holes configured to laterally offset. However, Applicant respectfully submits that the apparatus of Szczukowski does not inherently include a screw shank that bends inside the through hole, and through holes that are configured to laterally offset.

In particular, Szczukowski teaches that the screw 10 fits within a sleeve 20 that extends the length of the through-bore 41. When the assembly part 40 moves laterally relative to the carrier part 50, the screw 10 cannot move inside the through bore 41. “There is practically no play present between the sleeve 20 and the screw 10, so that the screw 10 can be tilted with respect to the sleeve 20 only negligibly.” See Szczukowski at col. 4, lines 55-60. Because the

sleeve 20 is around the shank 13 along the length of the through bore 41, the shank 13 cannot bend inside the through bore 41, as recited in claim 1.

Indeed no gap is present between the outside diameter of the shank 13 of the screw 10 and the inside diameter of the undercut 42 that would allow the screw 10 to bend. Thus, the diameter of the undercut cannot act as a distal segment.

In the system of claim 1, the shank of the screw bends due to, *inter alia*, a proximal segment that is enlarged compared to the distal segment. When a lateral force occurs, the shank bends inside the through hole in order to follow the shift of the through hole axis relative to the tapped hole axis, and to link the ends of the shank that are respectively coaxial with each of the hole axis that have shifted.

In Szczukowski, the ends of the shank 13 that are respectively coaxial with the through bore axis and threaded bore axis. Because the sleeve 20 restricts the ability of the shank 13 to bend, the breaking of the screw 10 is unavoidable in the shifting zone between the assembly part 40 and the carrier part 50.

Accordingly, Applicant respectfully submits that claim 1 is patentable over Szczukowski, Yamashita, and Mitsubishi, because the cited references taken alone or in combination fail to teach or suggest all of the features of claim 1.

Since claim 11 recites features similar to those discussed above in conjunction with claim 1, Applicant submits that claim 11 is patentable for at least reasons similar to those set forth for claim 1. Since claims 2-9 depend from claim 1, and claims 11-17 depend from claim 11, Applicant submits that claims 2-9 and 11-17 are patentable at least by virtue of their respective dependencies.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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